CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Twenty-second meeting of the Plants Committee
Tbilisi (Georgia), 19-23 October 2015

Strategic matters

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Decision 16.15)

THEMATIC ASSESSMENT OF INVASIVE ALIEN SPECIES (Deliverable 3bii) and THEMATIC ASSESSMENT OF SUSTAINABLE USE OF BIODIVERSITY ((Deliverable 3biii)

1. This document has been submitted by Mr. Hesiquio Benítez (Mexico) [1] as Chair of the Standing Committee Working Group on the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in relation to the agenda item 7.1.

[1] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

Thematic assessment of invasive alien species
Deliverable 3bii
and
Thematic assessment of sustainable use of biodiversity
Deliverable 3biii

Contents

Context

1. Decision IPBES-3/1, part IV, approved the initiation of scoping, primarily using virtual approaches, for a thematic assessment of invasive alien species and for a thematic assessment of sustainable use of biodiversity, for consideration by the Plenary at its fourth session.

2. In addition, the same decision (part III) "requested the MEP, in consultation with the Bureau, to develop a coordinated approach among the approved processes for the regional and subregional assessments, the thematic assessments and a global assessment, as resources permit, with a view to ensuring consistency while maintaining the quality of each of the assessments".

3. As agreed at the 5th meeting of the MEP and Bureau an open access web-based scoping consultation (E-conference) was organized and held 7-25 September 2015 to scope both:

   - thematic assessment of invasive alien species and their control (IAS)
   - thematic assessment of sustainable use and conservation of biodiversity and strengthening capacities and tools (SUB)

   The following outline of the structure applies to both E-conferences. The E-conference discussion topics were based on the initial IAS and SUB scoping documents, IPBES/2/16/Add.3 and IPBES/2/16/Add.6 respectively. The E-conference was conducted over 3 weeks and according to 4 distinct sessions, each aiming to address specific aspects of the scoping reports (Agendas in Annexes 4 and 5). Members of the Secretariat acted as E-conference managers and were responsible for the general organization, dissemination, day-to-day management, liaising with the E-conference co-chairs, editing and posting all accepted contributions. Two MEP members were the E-conference co-chairs responsible for providing the overall guidance and direction of the discussion. The IAS and SUB

co-chairs were Mark Lonsdale and Jean Bruno Mikissa, and Marie Stenseke and Sebsebe Demissew respectively. Invitations for participation were sent out almost one month in advance to all the people who have subscribed to receive IPBES announcements, reaching an audience of over 5,000 people. CBD and CITES were also asked to disseminate the announcement. The 1,000 experts currently involved in IPBES deliverables and the IPBES National Focal Points were also invited and encouraged to spread the announcement through their networks. Special invitations were sent to the 80 experts embedded in the regional assessments (40 IAS and 40 SUB experts). Some of these experts were also asked to provide introductory contributions, which were then reviewed and edited by the E-conference co-chairs and used as starting points for the discussion on different topics. In the last session, the participants were presented with the edited drafts of the scoping document based on the discussions in previous sessions, provided by the co-chairs. The participants were invited to make their last comments on the draft text before it was finalized for review and discussion at the 6th MEP and Bureau meeting.

4. A total of 1056 participants registered to participate in both E-conferences, 140 participants contributed with 585 comments of varying length and complexity, including 313 for IAS and 272 for SUB. A large number of literature, database and online references were also generated, which will form a valuable input for the assessment itself. Further details regarding the gender, regional and expertise balance can be found in Annex 1.

5. As envisioned, the drafts of the scoping documents (Annexes 2 and 3) have been prepared by the co-chairs based on the E-conference inputs. They were also presented to the participants as the final product of their contributions with hopes that by seeing their contributions reflected in the final document their participation in further E-conferences would be encouraged. The full proceedings were also made available to the participants.

Next steps

Finalization of scoping reports

6. Regarding the IAS Conference by co-chairs Mark Lonsdale and Jean Bruno Mikissa:
    - Are there major issues or contexts still missing from the scoping document?
    - Has the scope increased beyond what is practicable and affordable?
        - Major issues included in this version of the scoping document are (i) native species' becoming invasive due to climate change; (ii) more recognition that many introduced species value in some sectors of society alongside the negative impact invasive alien species. Note also that Marine invasive species are explicitly included in the scope - we are not certain that they were in everyone's minds for inclusion in the previous scoping process.
    - Will the proposed assessment be of value to policymakers and other stakeholders?
    - Does the scoping pay sufficient attention to ILK and capacity building questions?

7. Regarding the SUB E-conference by co-chairs Marie Stenseke and Sebsebe Demissew:

Questions to be addressed by the MEP

- General discussion and comments on the suggested scope. The pre-scoping document related closely to the CITES convention, while the e-conference opened up for a somewhat broader case. Therefore, there has been a significant reframing of the issue. Hence, it is now suggested that this assessment is solution oriented, and aimed at assessing sustainable practices. The focus is then on practices and measures that enhance sustainability in a broad sense, including conservation of biodiversity and ecosystem services. Due to financial and temporal limitations as well as potential overlaps with other assessments, three urgent cases are selected, and they will also serve as pilots in the issue of Sustainable use: i) Sustainable harvesting and trade of wild species; ii) sustainable tourism; iii) sustainable aquaculture. The two latter categories of use are suggestions taking their local-global use. Here, we seek guidance from the MEP/Bureau, and invite for other suggestions to replace these ones based on convincing reasons and that provide better information for SUB assessment.
- Has the scope increased beyond what is practicable and affordable?
- Will the proposed assessment be of value to policymakers and other stakeholders?

Reflection on the appropriateness of the E-conference as a tool

8. The open access web-based nature of the E-conferences enables a much more inclusive participation as well as broader perspective on the issues, providing a level of transparency that expert meetings do not. The E-conference platform appears to be a viable tool for generating input in drafting the scoping documents. It provides the participants with a wider time frame to review, contemplate and post their contributions as well as making it easier to provide references for the contributions. These references are then valuable inputs for the assessment process itself. Many participants are relatively comfortable in online processes while others might not be. A possible indication is the percentage of participants that have actually contributed around 13,25%. However, this number is consistent with other similar online E-conferences such as the European Platform for Biodiversity Research Strategy (EPBRS), which also had a contribution rate of around 10%. The time frame required for setting up and conducting future E-conferences, based on the experience of the Secretariat, would ideally be 11-12 weeks taking into account that some of the basic implementation has already been set up by these two E-conferences. The participation in the E-conference is relatively open, requiring only that the participants use their full name and abide by the rules. Every comment submitted is screened by the Secretariat before being made publicly available. In agreement with the E-conference co-chairs it has been decided that only comments that are clearly violating the rules should not be approved and the evaluation of the importance and value of the contribution is left to the other E-conference participants and the co-chairs when editing the scoping report. In order to facilitate the free flow of discussion taking into account the

global nature of the E-conference and participants contributing at any time during the day, the Secretariat moderators worked in shifts. Due to the schedule of the E-conference it is required of the co-chairs to synthesize comments and draft text over the weekend. The total costs incurred for these two E-conference are US$ 175 which cover the cost of the software used, compared to previous face-to-face meetings, which had costs of an estimated US$ 80,000. The work of preparing, organizing and running the e-conference took regular and careful effort volunteered by a four-member team of IPBES Secretariat interns before, during, and after the process. These interns worked remotely with the e-conference co-chairs and coordinated contributions from designated thematic experts. The workload and time requirements of the co-chairs were concentrated over the weekends, in the future in case of a large number of contributions such set up would not be reasonable. Therefore, in this case the Secretariat would take on a more proactive role in further screening out comments that were clearly not as relevant and perhaps identify commonalities between multiple posts and combine them for easier review by the co-chairs.

Documents for IPBES 4

9. Working documents:

   - Scoping report for a thematic assessment of invasive alien species
   - Scoping report for a thematic assessment of sustainable use of biodiversity

10. Information documents:

   - Proceedings of the E-conference scoping a thematic assessment of invasive alien species
   - Proceedings of the E-conference scoping a thematic assessment of sustainable use of biodiversity

Issues to be addressed by the MEP

The MEP will be invited:

(a) To finalize the scoping report for a thematic assessment on invasive alien species (see Annex 2 and para 6 above);

(b) To finalize the scoping report for a thematic assessment on sustainable use of biodiversity (see Annex 3 and para 7 above);

(c) To provide guidance on the appropriateness of the E-conference as a tool and how to further improve it (para 8 above).

Annex 1

The E-conference – preparation, agenda, statistics, experiences, lessons learned

Context

Following the mandate outlined above an open access web based consultations (E-conferences) were organized by the IPBES Secretariat. The objective of this web-based consultation was to run an inclusive scoping process allowing for a broad input into the development of the scope engaging as many experts as possible. This step represents an innovation compared to scoping processes performed in 2014, which consisted in only one face-to-face scoping workshop. This web-based consultation process is also to be seen as an attempt to engage more in modern web-based forms of communication and exchange as requested by the Plenary (Decision IPBES-3/1/IV, para. 3 and 4).

E-conference setup and outcomes

The e-conference format is based on posting discussion topics as this approach provides the greatest flexibility and inclusiveness and is fairly simple and tested (this format has been used successfully in various e-conferences organized by the European Platform for Biodiversity Research Strategy (EPBRS)). The e-conference used the IPS Community Suite (https://www.invisionpower.com/), which is essentially an internet forum/discussion board that allows people to post messages on the internet, reply to posted contributions, or simply read contributions. Many participants are relatively comfortable in online processes while others might not be. A possible indication is the percentage of participants that have actually contributed 13,25%. However, this number is consistent with other similar online E-conferences such as the European Platform for Biodiversity Research Strategy (EPBRS). A certain number of those that expressed an interest to contribute undoubtedly had a more difficult time finding their way and needed support of the Secretariat in directing them, indicated by over 30 individual email requests for help as well as over 45 E-conference private message conversations between the Secretariat and participants.

The e-conferences were conducted over 3 weeks discussing various elements relevant to the scoping report (see Appendix 1 and Appendix 2 for the respective agendas).

Members of the Secretariat acted as E-conference managers and were responsible for the general organization, dissemination, day-to-day management, liaising with the E-conference co-chairs, editing and posting all accepted contributions. Two MEP members were the E-conference co-chairs responsible for providing the overall guidance and direction of the discussion. The IAS and SUB co-chairs were Mark Lonsdale and Jean Bruno Mikissa, and Marie Stenseke and Sebsebe Demissew respectively.

Invitations for participation were sent out almost one month in advance to all who have subscribed to receive IPBES announcements, reaching a wide audience of over five thousand people, CBD and CITES were also asked to disseminate the announcement. The complete list of one thousand IPBES experts and the NFPs were also invited and encouraged to spread the announcement through their networks. Special invitations were sent to the eighty experts embedded in the regional assessments (forty IAS and forty SUB experts). Some of these experts were also asked to provide introductory contributions, which were then reviewed and edited by the E-conference co-chairs and used as starting points for the discussion on different topics. The length of the introductory contributions was limited to 400-800 words, while contributions from the participants were limited to 500 words in order to enable the co-chairs to review as large a number of comments as possible. Each session aimed to have an appropriate number of introductory contributions covering the key elements of the scoping report, see appendix 1 and 2 (IAS and SUB E-conference agendas). The Secretariat also prepared a

guidance/instruction document on how to use the e-conference platform and its features, as well as Terms of Use/Rules of the E-conference.

The E-conferences were divided into four sessions, with the first two sessions in the first week.

Session one discussions focused on the scope, rationale and utility of the assessment, as well as the policy relevant questions and important stakeholders. Session two discussion topics were based on the chapter outline from the initial scoping document.

In session three the discussions dealt with a new set of questions regarding the IPBES Conceptual Framework, uptake of ILK, indicators and metrics, capacities that need to be built and a request for references to publications, reports etc., as well as synthesized comments from the first two sessions made by the co-chairs.

For Session IV the co-chairs edited the existing draft scoping documents for each of the thematic assessments (IPBES/2/16/Add.3 and IPBES/2/16/Add.6) based on the contributions received during Sessions I, II and III. This updated draft was once more presented to the participants and open for discussion and modification of the text. At the end of week three the newly drafted text was reviewed once more based on the input and then posted for the participants to see as the final outcome of their contributions.

At the end of each week a compilation of all the received comments was prepared by the Secretariat and sent to the co-chairs of the respective conferences.

The Secretariat was responsible for managing the incoming contributions, each comment was approved before it was posted for other participants to see. This required the Secretariat to engage some of the participants either through direct private message system within the platform or through email contact if the participants were unable to register or sign in. In total over 30 emails and over 45 private messages were sent. The co-chairs were consulted regarding certain issues through regular Skype calls. Main discussion issues were regarding some of the contributions which were flagged by the Secretariat as potentially in breach of the rules; weekly announcements during the E-conference in order to encourage further participation from the IPBES subscribers (IPBES mailing list); a special focus was on the IPBES experts embedded in regional assessments which received personalized email invitations to contribute. The Secretariat sent out multiple announcements during the period of the E-conference, as well as multiple Twitter messages.

E-conferences' statistics

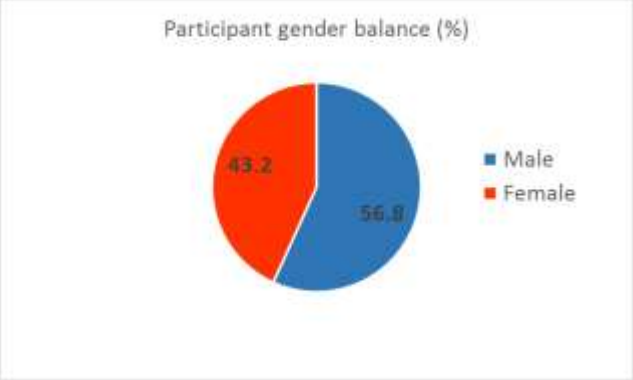
A total of 1056 participants registered to participate in both E-conferences, 140 participants contributed with 585 comments of varying length and complexity, out of which 313 for IAS and 272 for SUB. The topics in IAS had over 4400 views and SUB topics had over 4000 views.

The statistics below are for both e-conferences since the data was available only in an aggregated form due to the fact that they were hosted on a single platform.

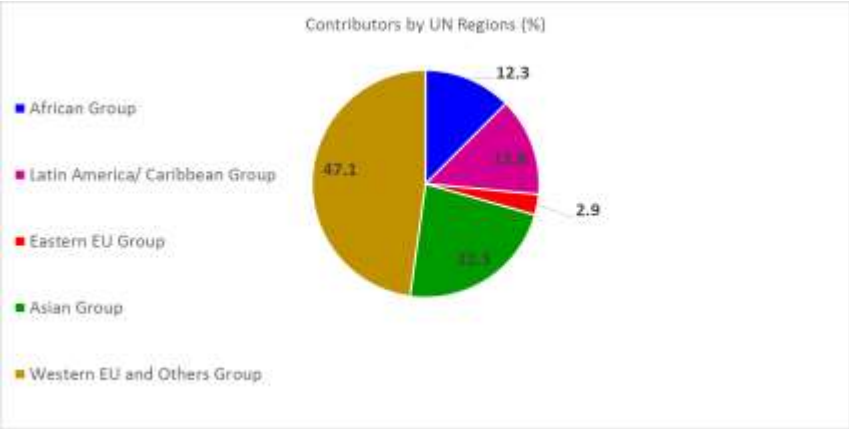
The participants were asked to indicate their area of expertise, it was possible to select multiple areas. The participants could contribute to both e-conferences.

Area of Expertise	Percentage (%) of all participants
Invasive Alien Species	40.7
Terrestrial Ecology	39.4
Freshwater Ecology	14.2
Sustainable Use of Biodiversity	54.1
Marine Ecology	12.4
Biological Science	31.3
Social Science & Governance	21.1
Economics	8.3
Ecosystems Services	41.1
Conservation & Restoration	44.3
Agriculture, Aquaculture & Forestry	25.7
Indigenous Local Knowledge	19.0
Governance & Administration	18.8
Practitioners & Business	9.7

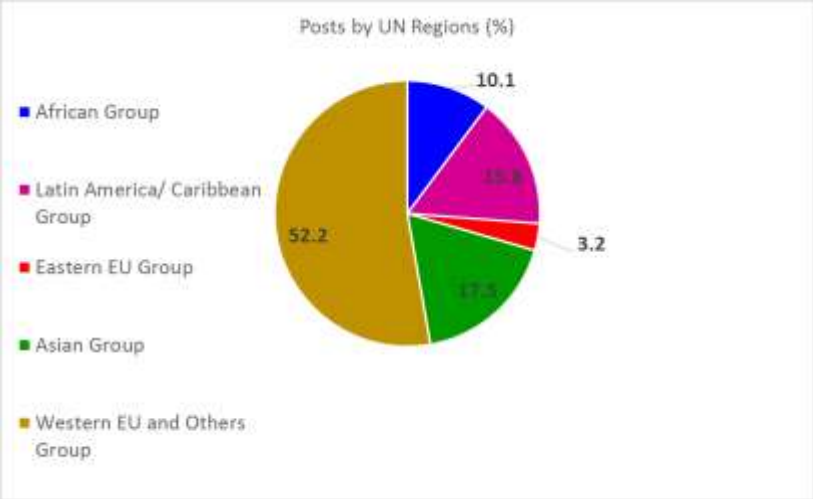
There were slightly more male participants than female participants.



When we look at the regions from which the participants (1056) come, it is clear that the majority of participants are from the WEOG group.



This is also visible when we compare the number of posts (585) that were contributed according to the UN regions.



Lessons learned and improvements

This E-conference represents an innovation compared to scoping processes performed in 2014, which consisted in only one face-to-face scoping workshop. It was an attempt to engage more in modern web-based forms of communication and exchange as requested by the Plenary (Decision IPBES-3/1/IV, para. 3 and 4). Certain lessons and possible improvements were identified from these first, experimental E-conferences.

Schedule, tasks and workload

The time frame required for setting up and conducting future E-conferences, based on the experience of the Secretariat, would ideally be 11-12 weeks taking into account that some of the basic implementation has already been set up by these two E-conferences. This schedule would also give sufficient time to the new interns to get familiar with the system and modify it according to the specific e-conference.

The first two weeks involve drafting a proposal of the agenda and putting it forth to the MEP and Bureau for review, with a particular request for input from the MEP members assigned to the deliverable in question. Following the MEP/Bureau review at least two co-chairs should be identified and preliminary meetings conducted. At the end of week 3 the initial preparations are completed and invitations are sent out for introductory contributions from the experts, they are given three weeks to submit the text that will be further reviewed by the E-conference co-chairs. Ideally introductory contributions should be between 400 and 800 words and would be prepared by IPBES experts for the deliverable embedded in regional assessments. The workload and time requirements of the co-chairs were concentrated over the weekends, in the future in case of a large number of contributions such set up would not be reasonable. Therefore, in this case the Secretariat would take on a more proactive role in further screening out comments that were clearly not as relevant and perhaps identify commonalities between multiple posts and combine them for easier review by the co-chairs. This was not done for these two e-conferences due to the number of contributions which was sufficiently low to give the co-chairs time to go through them.

Outreach methods:

The communication plan was prepared in advance and included many different kinds of emails thought to be relevant, but it did not include weekly announcements, Twitter messages and emails and announcements customized for different mailing groups.

Each week started off slowly with only a few comments and then tended to increase over the week. Therefore, the Secretariat decided to attempt to encourage participation by sending emails to all who have subscribed to receive IPBES announcements and also by Tweeting short sentences about ongoing discussions throughout the week.

The mailing groups relevant to this e-conference were: IPBES mailing list, 1000 IPBES experts, experts assigned to the deliverable being discussed, MEP/Bureau, groups of relevant stakeholders (i.e. CBD, CITES…). It would be interesting to include also academic networks and stakeholder engagement forums.

For some sessions, IPBES experts were asked to write introductory contributions to trigger discussion, but some invited experts did not respond to the Secretariat's invitation and most of them were busy and could not contribute. It is important that invitations for introductory contributions are sent well in advance giving the experts at least 3 weeks to write the text.

As an improvement for the next e-conference, a more comprehensive communication strategy needs to be developed, taking also into account time scheduling of the emails and including Twitter and Bulk email sending. The e-conference could also host chatroom discussions for specified periods of time and have video presentations instead of written introductory contributions.

It could be part of the communication plan to have an information document (note) describing the roles of co-chairs, Secretariat, introductory contributors, etc.

Comments from the co-chairs regarding the E-conference process

Comments by Mark Lonsdale (Co-Chair of the IAS E-conference):

- The E conference process was successful in engaging much more expertise than would have been affordable through a traditional face-to-face meeting.
- The co-chairs and support team were able to focus on the exchange of ideas in the development of text rather than on the logistics of managing a face-to-face meeting.

- At times, the discussion started slowly, but towards the close it was possible to say that there had been good engagement at every session.
- Despite attempts to attract qualified contributors globally, the co-chairs feel that issues of indigenous and local knowledge, and the development of policy relevant questions, was somewhat underdone in the discussion. Many contributors stated how important these questions are without suggesting relevant text.
- The introductory texts prepared by a range of experts were very patchy in quality and relevance to the question they were supposed to be addressing. This necessitated much last-minute revision of text by the co-chairs to ensure a properly focused and relevant debate. In future, the authors of introductory sectors sections should be given longer, so that they themselves have a chance to revise their sections in response to feedback from the co-chairs and Secretariat – there was so little time that many were probably left bruised by the complete overhaul or rejection of their text.
- Some contributors made very poor quality, even meaningless, contributions, which the co-chairs decided to allow, in the interests of transparency and inclusivity (noting that all contributions are vetted by the Secretariat before they are posted to the web, with difficult cases being referred to the co-chairs). The Secretariat picked up at least one instance of plagiarism, perhaps unintentional, by a contributor cutting and pasting words from the published paper by another person. The co-chairs feel it is probably not the responsibility of the platform to ensure that contributions posted are both ethical and of high quality, but it is good to have the Secretariat at least giving contributors an opportunity to reconsider their contributions.
- Many contributors appeared to have confused the scoping document that was the focus of the E conference with the assessment itself, frequently suggesting material and text for inclusion in the scoping document that would only become relevant during an actual assessment, such as detailed species lists etc.
- There is a tight turnaround each weekend for the co-chairs to summarise the feedback from the previous week and turn out fresh text. The Secretariat was extremely helpful in collating the comments but this still left a significant synthesis job for the co-chairs. The co-chairs have to be prepared to devote themselves to this process on the weekends between e-conference sessions.
- It was extremely valuable to have already prepared the previous scoping document so that the final product was not written from scratch, but rather had been involved re-drafting existing text.
- All told, the co-chairs feel this was a good use of time and resources and are far more efficient way of redrafting the scoping document than a face-to-face meeting.
- Recommendations:
    - this e-conference process should be used again for scoping and also even explored as a means of developing assessment text;
    - The introductory sections and associated questions are very critical to getting a good discussion going, and sufficient time needs to be allowed to develop this material;
    - E conference co-chairs should enter the process with a draft prepared scoping document – it would be asking too much to try and produce this during the course of the conference;

E-conference contributors must be regularly reminded of what a scoping document is, both in form (roughly 8 pp from current practice) and in intent (a document to advocate and explore the logistics for the conduct of an assessment, not an assessment in itself).

Comments by Marie Stenseke and Sebsebe Demissew (Co-Chairs of the SUB E-conference):

- Since SUB is not a straight-forward issue, and since there were many opinions about how it should be understood, preparatory meetings with the MEP/Bureau group assigned to the theme, helped to draw the contours of the scoping discussions. Of specific importance was that this group agreed on opening up for a moderate broadening of the scope.
- The E-conference process was successful in engaging more expertise than would have been present at a face-to-face meeting. At the same time, it meant a need to check the competence/experience/platform of the people making the contributions.
- The secretariat was of great help in running the e-conference smoothly and in compiling the comments for the co-chairs
- The role of the assigned experts was unclear. Some of them contributed with valuable introductory texts on requests, and a number of them, but not all, took part in the conference. At the ECA regional assessment meeting, we had a short gathering for the SUB-experts, to discuss the scoping and clarify the process. This was not possible in the other regional assessments, since the experts had not been notified and the e-conference process had not been designed.
- There was a significant workload during the weekends for the co-chairs, in summarizing the past sessions, and giving inputs to the coming ones. It had to be done between Friday 18.00 and Monday 10.00.
- The requests for people to make introductory contributions came late, less than a week in advance for many of them. Still, many of those asked managed to deliver texts in due time.
- Many participants lacked the full picture of IPBES, why many comments concerned issues that will be handled in other assessments
- Many comments were too detailed to be included in a scoping document, but a lot of it will be of value in the assessment.
- The step from brainstorming to a first draft was not satisfying. Due to the many ways of understanding SUB, together with the quite narrowly written pre-scoping document, we found it necessary to mainly collect view points the first sessions, before formulating a first draft of text for the scoping document. That meant just one week to discuss the suggested text, which once again due to the breadth of the issue, was not an obvious result of the discussions.

- Recommendations for future scoping processes

An issue like SUB with a high level of complexity, with a manifold of understandings and for which there are overlaps with a number of other assessments, is less suited for e-conferences, or it has to be prepared and better framed in advance.

Appendix 1

Agenda of the E-conference on Invasive Alien Species and their control

1st e-conference on "Scoping for the thematic assessment of invasive alien species (IAS) and their control"		Introductory contributions
Before e-conference	**The Context** **1. Background information and goal of the e-Conference** 1.1. Introduction to IPBES and its work program (*including reference to where the IAS assessment fits within IPBES*) 1.2. The initial draft scoping document on IAS and their control 1.3. Goal/objective, agenda, process and rules of the e-conference (*with particular emphasis on this being a scoping exercise; also guidance to on-going IAS work within the regional assessments*)	Prepared by the Secretariat with input from MEP and co-chairs
7-11 September **(1. week)**	**Session I – Discussing scope, rationale & utility of an IAS assessment** **2. What should be the scope, rationale & utility of an IAS assessment?** *[Introductory contribution - An overview of suggested scope, rationale & utility as well as opening up for suggestion any other issue that needs to be addressed.]* 2.1. What are the policy-relevant questions of global and regional relevance this assessment of IAS should address? *[Introductory contribution - A suggestion of an initial set of policy relevant questions.]* *2.2.* Who are the important stakeholders that should be reached with this assessment of IAS? And what are their needs? *[Introductory contribution - A suggestion of an initial set of stakeholders and their needs]* **Session Wrap-up**	All items prepared by Co-chairs Mark Lonsdale and Jean Bruno Mikissa
7-11 September **(1. week)**	**Session II – Discussing issues to be addressed by an IAS assessment** **3. Which issues need to be addressed by an IAS assessment?** *[Introductory contribution - An overview of suggested issues and opening up for suggestions of any other issue that needs to be addressed]* 3.1. Introduction to IAS and related concepts *[Introductory contribution – To cover issues such as current/future risks of IAS, their diversity, origin, means and pathways of introduction, spread, impact and policy needs]* 3.2. Types of IAS, their means and history of spread, the types of impacts that they have on biodiversity, ecosystem services and human well-being *[Introductory contribution – To introduce major taxonomic groups to be covered, and issues such as areal extent and trends in loss of biodiversity and ecosystem services, thresholds and scales of*	Prepared by Co-chairs Mark Lonsdale and Jean Bruno Mikissa Prepared by Jacques Tassin and Richard Corlett Prepared by Aníbal Pauchard and Martin A.

	change, and reconciliation of existing information with indigenous and local knowledge]	Schlaepfer
	3.3. Direct and indirect drivers responsible for the increasing number and impacts of IAS *[Introductory contribution - To introduce aspects of indirect drivers of change such as increased movement of commodities, and direct drivers such as climate change, land use change]*	Prepared by Franck Courchamp
	3.4. Environmental, economic and social costs of IAS, focusing in particular on their impact on biodiversity and ecosystem services, including non-economic values (e.g., cultural, social and shared, recreational, scientific, spiritual and aesthetic) *[Introductory contribution - To introduce IPBES work on values and valuation and suggestions of key aspects to be covered by the assessment]*	Prepared by Christopher B. Anderson
	3.5. Institutional arrangements, policy support tools and methodologies, options, and existing programmes *[Introductory contribution – Discuss institutional arrangements, policy support tools and methodologies, options, and existing programmes with regards to their effectiveness, for global, national and local management of IAS, including both pre-border and border approaches to strengthening biosecurity and building awareness of IAS issues, as well as successful examples of eradication programs]*	Prepared by Silvia Renate Ziller and Philip Ivey
	3.6. How to create or strengthen existing networks and national capacities for global awareness-raising, early warning systems on the diversity and seriousness of the impacts of IAS on biodiversity and rapid response strategies *[Introductory contribution - Specific emphasis on strengthening international and intergovernmental networks and strategies and procedures for forecasting, preventing the spread of IAS and eradicating and controlling them in order to conserve biodiversity as a basis for promoting human well-being]*	Prepared by Sebataolo J. Rahlao and Andrew Sheppard
	Session Wrap-up	Prepared by Co-chairs
14-18 September **(2. week)**	**Session III – Outlining an IAS assessment** **4. Revision of scope, rationale & utility of an IAS assessment based on discussions during week 1** *[Based on the contributions in Session I the scope, rationale & utility will be revised. Participants are invited to comment on any gaps in coverage – conceptual, thematic, geographic etc.]* **5. Revision of issues to be addressed by an IAS assessment based on discussions during week 1** *[Based on the contributions in Session II the issues to be addressed will be revised. Participants are invited to comment on any gaps in coverage – conceptual, thematic, geographic etc.]* ***6.*** **Assessment context and resources** *[Introductory contribution – To provide an overview of suggested issues and opening up for suggestions of any other issue that needs to be addressed]*	All items for Session III were prepared by Co-chairs Mark Lonsdale and Jean Bruno Mikissa

	6.1. Where do IAS fit into the IPBES conceptual framework? *[Introductory contribution - To introduce the conceptual framework and provide a suggestion of how the issue of IAS could be mapped onto it]* *6.2.* How can we achieve effective uptake of indigenous and local knowledge (ILK) on IAS in the assessment process? *[Introductory contribution - To introduce the draft approaches and procedures and present important aspects to consider to effectively take up ILK]* *6.3.* Which indicators, metrics and data sets should be used for an IAS assessment? *[Introductory contribution - To introduce IPBES work on indicators, metrics and data sets and suggest a set of indicators, metrics and data sets for IAS]* 6.4. What capacities would need to be built to strengthen the interface between IAS knowledge and policy? *[Introductory contribution - To introduce IPBES work on capacity building and suggest a set of capacity building needs regarding IAS]* *6.5.* What other important assessments, reports, publications, policy documents, best practice documents, relevant indigenous and local knowledge, initiatives, programs and strategies should experts consider in conducting their assessment? *[Introductory contribution – to outline which assessments, reports, publications, policy documents, best practice documents, relevant indigenous and local knowledge, initiatives, programs and strategies should the experts consider in conducting their assessment]* **Session Wrap-up (edited initial scoping document)**	
21-25 September **(3. week)**	**Session IV – Summarizing the e-conference discussions** 7. **Summaries of different topics/elements of a draft scoping report** *[Introductory contribution – To explain the nature and purpose of a scoping report and introduce each of the elements (see below), each of which would have its own discussion topic. Also opening up for suggestions of any other issue that needs to be addressed*] 7.1. Scope, rationale & utility (including policy relevant questions) [draft section based on previous discussions] 7.2. Assumptions (including ILK related issues) [draft section based on previous discussions] 7.3. Chapter outline and chapter content [draft section based on previous discussions] 7.4. Indicators, metrics and data sets [draft section based on previous discussions] 7.5. Relevant stakeholders and initiatives [draft section based on previous discussions] 7.6. Capacity Building [draft section based on previous discussions] **Closure of e-conference and outline of next steps**	All items prepared by Co-chairs Mark Lonsdale and Jean Bruno Mikissa

Appendix 2

Sustainable use and conservation of biodiversity e-conference agenda

1st e-conference on "Scoping for the thematic assessment of sustainable use and conservation of biodiversity (SUB) and strengthening capacities and tools"		Introductory contribution
Before e-conference	**The Context** **1. Background information and goal of the e-conference** 1.1. Introduction to IPBES and its work program (*including reference to where the SUB assessment fits within IPBES*) 1.2. The initial draft scoping document on SUB and strengthening capacities and tools 1.3. Objective, agenda, process and rules of the e-conference (*with particular emphasis on this being a scoping exercise; also guidance to on-going SUB work within the regional assessments*)	Prepared by the Secretariat with input from MEP and co-chairs
7-11 September **(1. week)**	**Session I – Discussing scope, rationale & utility of an SUB assessment** **2. What should be the scope, rationale & utility of an SUB assessment?** *[Introductory contribution – An overview of suggested scope, rationale & utility and opening up for suggestions of any other issue that needs to be addressed]* 2.1. What are the policy-relevant questions of global and regional relevance this assessment of SUB should address? *[Introductory contribution - A suggestion of an initial set of policy relevant questions.]* 2.2. Who are the important stakeholders that should be reached with this assessment of SUB? And what are their needs? What is the added value compared to CITES? *[Introductory contribution – A suggestion of an initial set of stakeholders and their needs and also introducing CITES and the added value of SUB scoping]* **Session Wrap-up**	All items prepared by Co-chairs Marie Stenseke and Sebsebe Demissew
7-11 September **(1. week)**	**Session II – Discussing issues to be addressed by an SUB assessment** **3. Which issues need to be addressed by an SUB assessment?** *[Introductory contribution - An overview of suggested issues and opening up for suggestions of any other issue that needs to be addressed]* 3.1. Introduction to SUB and related concepts *[Introductory contribution – To cover issues such as recognized standards on SUB and synergy with biodiversity-related conventions, specialized agencies and other stakeholders; introducing the definition of 'wild species' and the anthropogenic effect in the enhancement of certain species and also the importance of harvesting wild species to local communities and livelihoods; the precautionary approach; the maximum sustainable yield theory]* 3.2. Taxa to be studied, preferably groups of mainly harvested and commercially valuable wild species with similar management schemes or life forms representative of all regions	Prepared by Co-chairs Marie Stenseke and Sebsebe Demissew Prepared by Co-chairs Marie Stenseke and Sebsebe Demissew

	[Introductory contribution – To introduce the taxa to be studied and outlining their conservation status]	Prepared by Co-chairs
	3.3. Ecological, economic, social and cultural importance of selected taxa (taking into account consumers, trade and global dimensions) *[Introductory contribution – To introduce the importance of selected taxa and outlining their conservation status]*	Prepared by Francisco Ramón Barbarán
	3.4. Impacts of socio-economic drivers of mainly harvested taxa in markets and local communities under different management regimes *[Introductory contribution – To introduce aspects of impacts of socio-economic drivers under different management regimes]*	Prepared by Francisco Ramón Barbarán and Ramon Pitchs
	3.5. Effect of harvest or exploitation on the conservation status of selected taxa, ecosystems, ecosystem services and other value systems under different management regimes, including potential alternatives for the use of threatened species that sustain local communities *[Introductory contribution – To introduce aspects of harvest or exploitation under different management regimes]*	Prepared by Fabrice DeClerck and Wendy R. Townsend
	3.6. Management guidelines and tools on sustainable use for selected taxa with potential application for other species under similar management regimes *[Introductory contribution – To introduce management guidelines and tools, including best practices, procedures, lessons learned and recommendations for selected taxa with potential application for other species under similar management regimes]*	Prepared by Wendy R. Townsend
	Session Wrap-up	Prepared by Co-chairs
14-18 September **(2. week)**	**Session III – Outlining an SUB assessment**	
	4. Revision of scope, rationale & utility of an SUB assessment based on discussions during week 1 *[Based on the contributions in Session I the scope, rationale & utility will be revised. Participants are invited to comment on any gaps in coverage – conceptual, thematic, geographic etc.]*	Prepared by Co-chairs
	5. Revision of issues to be addressed by an SUB assessment based on discussions during week 1 *[Based on the contributions in Session II the issues to be addressed will be revised. Participants are invited to comment on any gaps in coverage – conceptual, thematic, geographic etc.]*	Prepared by Co-chairs
	6. **Assessment context and resources** *[Introductory contribution – To provide an overview of suggested issues and opening up for suggestions of any other issue that needs to be addressed]*	Prepared by Co-chairs Demissew
	6.1. Where does SUB fit into the IPBES conceptual framework? *[Introductory contribution - To introduce the conceptual framework and provide a suggestion of how the issue of SUB could be mapped*	Prepared by Co-chairs

	onto it] *6.2.* How can we achieve effective uptake of indigenous and local knowledge (ILK) on SUB in the assessment process? *[Introductory contribution - To introduce the draft approaches and procedures and present important aspects to consider to effectively take up ILK]* *6.3.* Which indicators, metrics and data sets should be used for an SUB assessment? *[Introductory contribution - To introduce IPBES work on indicators, metrics and data sets and suggest a set of indicators, metrics and data sets for SUB]* 6.4. What capacities would need to be built to strengthen the interface between SUB knowledge and policy? *[Introductory contribution - To introduce IPBES work on capacity building and suggest a set of capacity building needs regarding SUB]* *6.5.* What other important assessments, reports, publications, policy documents, best practice documents, relevant indigenous and local knowledge, initiatives, programs and strategies should experts consider in conducting their assessment? *[Introductory contribution – to outline which assessments, reports, publications, policy documents, best practice documents, relevant indigenous and local knowledge, initiatives, programs and strategies should the experts consider in conducting their assessment]* **Session Wrap-up (edited initial scoping document)**	Prepared by Marie Roue and Wendy R. Townsend Prepared by Co-chairs Marie Prepared by Ivar Baste, Beria Leimona and Nkwatoh Athansius Fuashi Prepared by Co-chairs Prepared by Co-chairs
21-25 September **(3. week)**	**Session IV – Developing a draft scoping report** 7. **Summaries of different topics/elements of a draft scoping report** *[Introductory contribution – To explain the nature and purpose of a scoping report and introduce each of the elements (see below), each of which would have its own discussion topic. Also opening up for suggestions of any other issue that needs to be addressed*] 7.1. Scope, rationale & utility (including policy relevant questions) [draft section based on previous discussions] 7.2. Assumptions (including ILK related issues) [draft section based on previous discussions] 7.3. Chapter outline and chapter content [draft section based on previous discussions] 7.4. Indicators, metrics and data sets [draft section based on previous discussions] 7.5. Relevant stakeholders and initiatives [draft section based on previous discussions] 7.6. Capacity Building [draft section based on previous discussions]	All items prepared by Co-chairs Marie Stenseke and Sebsebe Demissew

	Closure of e-conference and outline of next steps	

Annex 2:

Draft scoping report for a thematic assessment of invasive alien species

Contents

Scope, rationale and utility (including policy-relevant questions)

Scope

The objective of the proposed thematic assessment of invasive alien species and their control is to assess the global diversity of invasive alien species that affect biodiversity and ecosystem services; the extent of the threat posed by such species to various categories of biodiversity and ecosystem services, including impacts on agrobiodiversity and food, human health and livelihood security; the major pathways for and drivers of the introduction and spread of invasive alien species, between and within countries; the global status of and trends in the impacts of invasive alien species and associated management interventions by region and subregion, taking into account various knowledge and value systems; and the adequacy of awareness of the extent of invasive alien species and their impacts and the effectiveness of current international, national and subnational control measures and associated policy options that could be employed to prevent, eradicate and control invasive alien species.

The CBD (https://www.cbd.int/invasive/terms.shtml) defines IAS as "plants, animals, pathogens and other organisms that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health. In particular, they impact adversely upon biodiversity, including decline or elimination of native species - through competition, predation, or transmission of pathogens - and the disruption of local ecosystems and ecosystem functions." The assessment will largely focus on assessing cases fitting this definition, especially cases of demonstrable impact on biodiversity and human wellbeing through effects on ecosystem services. In addition, however, if the IAS assessment is to be useful for policy formulation, it must assess, not only current IAS impacts, but also sources of emerging risk such as the reservoirs of introduced, but currently non-harmful, species existing in many regions, and species native to a region that are shifting in range due to environmental change. The assessment must also recognise that IAS are not a purely passive phenomenon – most international species movement is human-mediated or human-driven, e.g. through trade, and the expansion of IAS into new range is often a result of environmental change. Lastly, it must devise management strategies that are sensitive to the fact that many alien species may be both

problematic and useful. Some species will be manageable but others will be intractable and need to be recognised as such. Responses will therefore need to be flexible and pragmatic, including not only prevention and management of IAS, but also adaptation or coexistence.

Rationale

The proposed assessment responds directly to Aichi Biodiversity Target 9: "By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment." It will also contribute to the achievement of Aichi targets 5, 11, 12 and 17[1], and help to determine priorities for management under these targets. Invasive alien species are acknowledged as major drivers of species extinctions globally; they degrade habitats and have serious impacts on protected areas around the world.

Invasive alien species, which include a vast, and rapidly increasing, range of mainly non-native terrestrial and freshwater and marine aquatic vertebrates, invertebrates, plants and disease organisms, constitute one of the most serious and rapidly growing threats to biodiversity, ecosystem services and food, health and livelihood security. For many countries, invasive alien species are seen as a more serious threat than climate change. Invasive alien species have been responsible for the extinction of native plants and animals, degradation of rare and threatened ecosystems and ecological communities, crop failure and declining agricultural productivity, loss of cultivar and animal breed diversity and damage to property, infrastructure, native fisheries, tourism and outdoor recreation. The threats to native biodiversity from marine invasive alien species, either from deliberate or accidental introductions (e.g., in contaminated ballast water or as encrusting organisms on ships), are increasingly serious and very poorly understood.

A high percentage of globally and locally threatened species and ecosystems are at risk from invasive alien species. Whereas pollution and land degradation can be directly reduced, an invasive alien species constitutes self-replicating pollution with the potential to cause increasing harm if left unmanaged. Worldwide, it has been estimated that the cost of damage from invasive alien species exceeds $1.4 trillion, amounting to 5 per cent of the global economy; in the United States of America, the cost alone have been estimated at $120 billion, with over 100 million acres, the size of California, being affected, while in Europe the economic losses have been estimated at over €12.5 billion per year. The impacts on oceanic islands are even more serious, with a majority of all extinctions of mammals, birds, amphibians, reptiles, land crabs, land snails and insects being directly or indirectly the result of invasive alien species. The economic, environmental and social costs of the use of pesticides to control invasive alien species are also a major cause of the loss of biodiversity and environmental pollution and are a threat to human health.

Utility

The rapidly growing threat that invasive alien species pose to biodiversity, sustainable development and human well-being are generally poorly quantified and poorly understood by policymakers. The proposed assessment, if undertaken, will raise awareness of the nature and seriousness of the threat posed by invasive alien species; identify policies that are required at the international level and by Governments, the private sector and civil society to help stop the spread of, eradicate or control the impacts of invasive alien species; and represent an early deliverable of the Platform that highlights how it can add value to policy formulation to address the biodiversity crisis.

[1] Available at http://www.cbd.int/sp/targets.

Policy-relevant questions

The assessment will aim to address questions of relevance to biodiversity and border policy makers such as:

- What progress has been made in tackling Aichi targets relevant to IAS?
- What global-level policy initiatives would assist in IAS management?
- What are the obstacles to uptake or impact of known IAS management measures and policies?
- What approaches are available for prioritizing among IAS threats?
- How can alliances and networks assist in IAS management? What role can regional partnerships play?
- Are there perverse policy drivers that unintentionally create IAS risks?
- How can policy-makers decide which issues to tackle first given limited resources?
- Would there be value in developing a database of good IAS legislation, good monitoring systems, good response systems; and those countries in need of capacity building?
- What are the impacts, risks, and benefits of IAS for human well-being?
- What opportunities do policy sectors, businesses, NGOs and other stakeholders have to benefit from better management of IAS?

Assumptions (including ILK related issues)

The proposed assessment will be based on existing scientific literature and national assessments and will draw on the work of existing institutions and networks (see Section 7.5 Relevant Stakeholders and Initiatives). The assessment team will also be able to draw upon a list of references to published and grey literature, with comments, assembled during the e-conference scoping process. Where there is uncertainty, approaches to uncertainty outlined in the IPBES Guide for Assessments will be used. The assessment team will be diverse in terms of skills, gender, and global coverage.

It will also endeavour to assess the regional status of invasive alien species by building synergies with indigenous and local knowledge systems, because local communities of farmers, hunters, fishers and other local experts may have the best time-depth knowledge of the history, pathways, changing impacts and the effectiveness of efforts to manage invasive alien species. ILK is a dynamic body of integrated, holistic, social-ecological knowledge, practices and beliefs, about the relationship of living beings, including humans, with one another and with their environment.

Working with indigenous and local knowledge in the context of IPBES assessments requires recognition that effective and ethical practices in this domain support a dynamic interactive cycle (International Society of Ethnobiology 2006).

The Approaches and Procedures to ILK outlined in the IPBES Guide for Assessments will inform the IAS assessment process. Because of the dynamic nature of ILK, IPBES processes are open to ongoing and novel submissions (e.g. the products of global and sub-regional dialogues) of relevant research and materials from different knowledge systems including grey literature and inputs from the ILK Task Forces, the Roster of ILK Experts and Networks, and develop means to address them in IPBES assessment and other deliverables.

Chapter outline and chapter content

It is proposed that the results of the thematic assessment will be a policy-relevant six-chapter report, as set out below.

Chapter 1. Introduction to the concepts of invasive alien species, including:

a. The current and future risks they pose to marine, freshwater and terrestrial ecosystems;
b. Invasive alien species in the context of the IPBES conceptual framework;
c. Their diversity, origins, means and pathways of introduction and spread, ecology, seriousness of their impacts;
d. The need for awareness and appropriate pre- and post-border policies to respond to their impacts and spread;
e. Methodologies and information systems to monitor their extent, spread and impact.

Chapter 2. Overview of the types of invasive alien species, their means and history of spread and the types of impacts, broken down by region, that they have on biodiversity, different ecosystems, ecosystem services, and human well-being. Major taxonomic groups to be covered include:

a. Vertebrates (e.g., rats, mice, possums, mongooses, cats, goats, deer, pigs, horses, cattle, camels, foxes, rabbits, monkeys, snakes, lizards, turtles, toads and frogs, birds and fish);
b. Invertebrates (e.g., ants, mosquitoes, flies, wasps, aphids, beetles, termites, cockroaches, locusts, moths, crabs, snails, slugs and other molluscs, flatworms, crustaceans), especially colonial organisms such as ants and wasps and mosquito vectors of disease that seem to be extending their ranges;
c. Plants (e.g., trees, shrubs, vines, grasses, herbs, seaweeds and algae);
d. Diseases and micro-organisms (e.g., fungi, viruses, bacteria, cyanobacteria, protozoa, coral diseases, plankton, parasites).

Other issues to be covered in chapter 2 include:

e. Areal extent of and trends in loss of biodiversity and ecosystem services, land degradation and loss of food and livelihood security due to invasive alien species in all regions and subregions;
f. Assessment of thresholds and scale of change (both positive and negative), including the recent arrival of new invasive alien species;
g. Reconciliation of existing information with indigenous and local knowledge;
h. Future risks to regions and subregions, including reservoirs of introduced species not currently having an impact, and cases of native species shifting in range;

Chapter 3. Global assessment of the direct and indirect drivers responsible for the increasing number and impacts of invasive alien species. This will be a critical analysis, in part using the IPBES Conceptual Framework, including:

a. An assessment of drivers of change such as the increased movement of commodities and other materials by sea, air and land transport, due to trade;
b. Development policies, including aquaculture, forestry, agriculture;
c. Climate change, which in several regions of the world is expected to increase the rate and impacts of invasions, land degradation, and eutrophication;
d. Deliberate introductions, such as the pet and ornamental plant trades, the spread of species for restoration of degraded ecosystems, or those valued by local communities for firewood and other purposes;
e. Inadequate international and national procedures to manage IAS, including an assessment of direct drivers leading to the increasing dominance of invasive alien species such as land-use change and degradation, which favour invasion, and pesticide use.

Chapter 4. Global assessment of the environmental, economic and social impacts of invasive alien species, with particular focus on their impact on biodiversity, ecosystems, and ecosystem services, including non-economic values, e.g., cultural, social and shared, recreational, scientific, spiritual and aesthetic. This would include global and regional case studies of impacts of invasive alien species on biodiversity, ecosystem services and food, health and livelihood security and policy options. The chapter will attempt to characterize the diverse degrees of IAS impacts, not just focusing on the most impactful species, in order to get a realistic, uninflated assessment of overall impact. The chapter would also assess occurrences of useful introduced species that also have a negative impact.

Chapter 5. Review of institutional arrangements, options and existing programmes, including their effectiveness, for global, national and local management of invasive alien species, including both pre-border and border approaches to strengthening policies and building awareness of invasive alien species issues. This will be based on assessing best practices and the effectiveness of existing programmes to assess and address risks, including national quarantine measures, and countries that have adopted systematic biosecurity approaches. At the same time, some introduced species are also useful in the local economy, while many introduced species do not become problematic, and it is difficult to predict those that will. Some species may be present for decades before emerging as harmful. All this poses a significant problem for regulators attempting to protect the environment from IAS, and the assessment will need to suggest policy solutions that are able to handle this complexity.

The chapter will also consider:

a. Preventing the international and intranational spread of invasive alien species, including the possible role of the Convention on Biological Diversity, and the role of trade and economic development;
b. The precautionary principle and approach in managing IAS; review the efficacy of risk assessment as a tool for IAS; Managing complexity e.g. introduced species that are useful and harmful depending on context; uses of social media for detection and management of IAS outbreaks;
c. Eradicating or managing invasive alien species once they are present, including control options such as precision application of pesticides, baits and biological control, depleting IAS populations through use and exploitation, and other practices such as gene-drive technology. Methods for the ethical control of invasive animals will be documented, as well as case studies of opposition to animal control following the use of inhumane methods.
d. Documenting capacities of different countries to manage IAS, barriers to uptake of IAS tools, and suggesting methods of building capacity;
e. Managing IAS in protected areas.

Potential trade-offs and options for policy responses in relevant sectors and implications of inaction would also be assessed. This would include a comprehensive analysis of relatively common risks related to the absence of relevant policies for controlling invasive alien species such as a lack of customs controls. Lastly, the negative impacts of control measures, and perverse drivers such as the impact of prohibiting use of native species, would be considered.

Chapter 6. Options for global awareness-raising, creating or strengthening early warning systems on the risks of invasive alien species, and for sharing knowledge internationally on prevention and management. Options will lay emphasis on strengthening international and intergovernmental networks and strategies and procedures

for forecasting, preventing the spread of invasive alien species and eradicating and controlling them in order to conserve biodiversity as a basis for promoting human well-being.

Indicators, metrics and data sets

Indicators are values or signs that unambiguously reflect the status, cause or outcome of an object or process and are an important tool in the assessment of biodiversity and ecosystem services[2]. Biodiversity and ecosystem service indicators serve multiple purposes which can broadly be categorized into three key functions: (1) tracking performance; (2) monitoring the consequences of alternative policies; and (3) scientific exploration[3]. Assessments mostly use them for the first two purposes.

In the case of IAS, indicators are being developed within the Biodiversity Indicators Partnership; see http://www.bipindicators.net/globalindicators, on a Pressure/State/Response model. Current Indicators proposed for IAS under this model include:

- Pressure: Status of alien species invasion is currently often expressed as the number of documented IAS per country
- State: Red List Index for impacts of invasive alien species shows the overall impact of IAS on the extinction risk of species globally. It is a measure of how fast IAS are driving the world's biodiversity to extinction (and how effectively we are mitigating this)[4].
- Response: Trends in international invasive alien species policy shows the number of international agreements relevant to controlling IAS and how this has changed through time, as well as the change in the number of countries party to these agreements; .

The assessment process will consider whether there are other indicators that could be used. During the scoping process, the following suggestions were made: status of direct incursion prevention activities (border inspections, surveillance and detection rates) and pathways monitoring programs – terrestrial and marine; number of eradication programs; number of ongoing IAS management programs including biological control programs or historical releases and asset protection activities; number of protected areas e.g. Ramsar sites contaminated by IAS; number of ecosystems/biomes considered affected by widespread IAS; trends in invasive vertebrate eradications, trends in numbers of IAS introduction events; trends in adoption of national legislation relevant to the prevention or control of IAS; trends in the proportion of global trade subject to control measures; and programs actively promoting known invasive species as a negative indicator of awareness.

[2] Ash, N., Blanco, H., Brown, C., Garcia, K., Henrichs, T., Lucas, N., Raudsepp-Hearne, C., Simpson, R.D., Scholes, R., Tomich, T.P., Vira, B., and Zurek, M. (Eds). (2010). *Ecosystems and Human Well-being: A Manual for Assessment Practitioners*. Washington DC: Island Press.

[3] Failing, L., & Gregory, R. (2003). Ten Common mistakes in designing biodiversity indicators for forest policy. *Journal of Environmental Management 68*: 121–32.

[4] Blackburn TM, Essl F, Evans T, Hulme PE, Jeschke JM, et al. (2014) A Unified Classification of Alien Species Based on the Magnitude of their Environmental Impacts. PLoS Biol 12(5): e1001850. doi:10.1371/journal.pbio.1001850 http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001850.

The assessment will survey the availability of data recognizing that the scoping process indicated that such data are likely to be very patchy globally. Where possible, the assessment will be carried out at the country scale, or at a more detailed 'actionable' scale when appropriate. Data collection and structuring should allow dis-aggregation based on relevant variables such as environment/system, taxa etc.

Relevant stakeholders and initiatives

Stakeholder involvement is central to creating the appropriate enabling environment to undertake an assessment. The core principles of successful assessments (relevance, credibility and legitimacy) are best achieved through strategic and effective participation of all relevant stakeholders in the assessment process. Having a diverse range of stakeholders involved in an interactive process can promote knowledge and information exchange and allows different groups to express their positions and interests on issues. Furthermore the involvement of multiple stakeholders can enrich the process, with individuals and organisations working to a common goal, and ownership of the assessment contributing to the authorisation environment.

Important stakeholders for this assessment will include biodiversity and border policy makers. For such stakeholders, there needs to be a strong focus in the assessment on the benefits for countries and their people, including human well-being, of managing the risks of IAS. However, because IAS are often the result of intentional movement of species, or of human-driven process such as trade, important stakeholders will also include international trade organisations, border officials, and agencies involved in the intentional movement of species such as forestry and agricultural innovators. However, there are risks involved with including a wide-range of stakeholders, which may include lobby groups, therefore stakeholder involvement will be clearly planned in order not to jeopardise the independence of the assessment. Much IAS management must be conducted at local levels, so the assessment will need to be communicated through context-sensitive material to a broad range of audiences at various scales, including ILK holders. In addition, it is the public demand for novel pets and ornamentals that is a rich source of IAS, and many governments will likely need support in communicating with this important risk-creating sector. Useful communication materials stemming from the assessment could also include training material for land managers and case studies of successful IAS management plans. The assessment will consider the benefits of building an IAS global support network to help share expertise and experience. Maintaining capability and continuity in the long term has been an issue for many countries in the past and the assessment will need to explore mechanisms to address this.

Important sources of information and solutions will be sourced from stakeholders such as the International Union for Conservation of Nature/Species Survival Commission (IUCN/SSC) Invasive Species Specialist Group, the IUCN Invasive Species Initiative, BirdLife International's Invasive Alien Species Programme, CAB International, the Global Invasive Alien Species Information Partnership (an initiative supported by the secretariat of the Convention on Biological Diversity), the Food and Agriculture Organization of the United Nations, especially its agriculture, aquaculture and forestry divisions, Ramsar, UNESCO, the World Health Organisation, the International Plant Protection Committee, and other relevant international and regional expert bodies.

Capacity building

The following general priority capacity building needs were approved by the IPBES Plenary[5] based on the advice of the task force on capacity building, and will be adopted in the proposed IAS assessment:

a) Increase the ability of diverse experts to participate in the Platforms deliverables; to be primarily addressed through the proposed fellowship, exchange and training programme, with the priority placed on the Platform's regional assessments. This would be resourced through the Platform trust fund and in-kind contributions, and. over time by the mobilization of resources through the capacity building;

b) Enhance the capacity to undertake, use and improve national assessments of biodiversity and ecosystem services, and develop the capacity for the use of assessment findings in policy development and decision-making;

c) Implement pilot or demonstration projects addressing other categories of needs; and

d) Draw on indigenous and local knowledge approaches and procedures in developing solutions.

The scoping process on IAS found that IPBES could make an important contribution by promoting the development and strengthening of human capital and institutional infrastructure to deal with IAS. The process also recognised that there were large differences between countries in their capacities to manage IAS, and that many would need help in developing such capacity. It found that efforts to reduce the impact of IAS will not be successful unless they are coordinated and supported across each country's government agencies. This is specially challenging when IAS are being promoted because of their economic benefits (e.g. invasive aquaculture species). IPBES could help to develop a governance model and capacity that considers all these factors and stakeholders.

Capacity building on IAS will aim to improve human, institutional and technical capacities in the long term, for the informed and effective implementation and use of assessments, for the development and use of policy support tools and methodologies, and for improving access to necessary data, information and knowledge. It will draw upon the assessment and aim to improve the science-policy interface. An important capability may well be the expertise to carry out assessments of existing and potential IAS threats for any development or project and, based on these assessments, develop biosecurity plans and IAS management plans.

The assessment will identify scientific and other skills gaps hindering the sound management of IAS, such as taxonomy, expertise in biotic impact assessment, active adaptive management, structured decision making, systematic conservation planning and known response/management approaches (eradication, IPM and biological control) and associated infrastructure. To support citizen science, there is much publicly available data, access and analytical tools that can be easily made available to countries that need them without significant incurred costs of development.

[5] Approved in January 2015 as part of decision IPBES-3/1, and included in Annex 1 to that decision

Process and timetable

1. The proposed process and timetable for preparing the assessment report, including actions, milestones and institutional arrangements, is set out below.

Date	*Actions and institutional arrangements*
2016	
First quarter	Plenary at its fourth session approves the conduct of the thematic assessment of invasive alien species and their control coupled with the regional assessments of biodiversity and ecosystem services, asks for offers of in-kind technical support for the assessment and requests the Bureau and the secretariat to establish the necessary institutional arrangements to put in place technical support
	The Chair, through the secretariat, requests nominations from Governments and other stakeholders of experts to prepare the assessment report
Second quarter	Secretariat compiles lists of nominations
	The Panel selects the assessment co-chairs, coordinating lead authors, lead authors and review editors, using the approved selection criteria set out in decision IPBES-2/3 (IPBES/2/17, annex)
	Meeting of the Management Committee (co-chairs, head of the technical support unit, and MEP/Bureau members) to select remaining expert team and respective roles (i.e., coordinating lead authors, lead authors and review editors)
	Selected nominees contacted, gaps filled and list of co-chairs, authors and review editors finalized
Second/early third quarter	First author meeting with 59 participants: co-chairs, coordinating lead authors and lead authors, 8 liaison experts involved in regional assessments (two experts for each of the four regional assessments), MEP/Bureau members.
Fourth quarter	Zero order drafts of chapters prepared and sent to secretariat (technical support unit)
2017	
First quarter	First order drafts of chapters prepared and sent to secretariat (technical support unit)
	Compilation of chapters into a first order draft (6 weeks)
Second quarter	First order draft of collated regional and subregional invasive alien species assessments sent for expert review (6 weeks, June/July)
	Collation of review comments by secretariat (technical support unit) for first draft sent to authors (2 weeks)
Early Third quarter	Second author meeting (39 participants) including: 8 liaison experts involved in the regional assessments, MEP/Bureau, co-chairs, coordinating lead authors and review editors)
Third quarter	Second order drafts of chapters and first order draft of summary for policymakers prepared (5–6 months)

2018	
First quarter	Second order draft of the assessment and first order draft of the summary for policymakers sent for government and expert review (2 months)
First quarter	Collation of review comments for second order draft of the assessment and first order draft of the summary for policymakers sent to authors (2 weeks)
Second/Early third quarter	Third author meeting (71 participants: co-chairs, coordinating lead authors, lead authors, review editors and MEP/Bureau members)
Third/Fourth quarter	Final text changes to the assessment and the summary for policymakers (6 months)
2019	
First quarter	Translation of the summary for policymakers into the six official languages of the United Nations (1 month)
First quarter	Submission of the assessment, including the translated summary for policymakers, to Governments for final review prior to Plenary session (6 weeks)
First quarter	Final government comments on the summary for policymakers for consideration by authors prior to next Plenary session
May (To be confirmed)	Plenary to approve/accept the thematic assessment of invasive alien species, including the summaries for policymakers

Cost estimate

2. The table below shows the estimated cost of conducting and preparing the assessment report.

Year	*Cost item*	*Assumptions*	*Estimated costs (United States dollars)*
2016	Meeting of co-chairs and secretariat/technical support unit	Meeting costs (1/2 week, 5 participants, in Bonn)	0
		Travel and DSA (3 x $3,750)	11 250
	First author meeting (participants: co-chairs, coordinating lead authors, lead authors, liaison experts and MEP/Bureau)	Meeting costs (1 week, 59 participants) (25 per cent in kind)	18 750
		Travel and DSA (45 x $3,750)	168 750
	Technical support	1 full-time equivalent professional position (50 per cent in kind)	75 000
2017	Second author meeting (participants: co-chairs, coordinating lead authors, review editors, liaison experts and MEP/Bureau)	Meeting costs (1 week, 39 participants) (25 per cent in kind)	7 500
		Travel and DSA (30 x $3,750)	112 500
	Technical support	1 full-time equivalent professional position (50 per cent in kind)	75 000
2018	Third author meeting (participants: co-chairs, coordinating lead authors, liaison experts, review editors and MEP/Bureau)	Meeting costs (1 week, 71 participant)	18 750
		Travel and DSA (54 x $3,750)	202 500

Year	*Cost item*	*Assumptions*	*Estimated costs (United States dollars)*
	Technical support	1 full-time equivalent professional position (50 per cent in kind)	75 000
	Participation by the two co-chairs and two coordinating lead authors in fifth session of Plenary	Travel and DSA (3 x $3,750)	11 250
2019	Dissemination and outreach	Translation of summary for policymakers into the six official languages of the United Nations, publication and outreach	117 000
Total			**893 250**

Appendix 1

Numbers and distribution of authors across the thematic and regional assessments

Table1: Coupling from the perspective of the IAS Assessment

Chapter of IAS Assessment	IAS CLAs	IAS LAs	IAS LAs embedded in Regional Assessments	Total
Intro/Summary	2 Co-Chairs		-	**2**
Chpt 1 Concepts	2 CLAs	8 LAs	-	**10**
Chpt 2 Overview and history	2 CLAs	8 LAs	-	**10**
Chpt 3 Direct and Indirect Drivers	2 CLAs	4 LAs	9 IAS LAs in Chpt 4 Regional Assessment	**6 (9)**
Chpt 4 Environmental, economic and social impacts	2 CLAs	4 LAs	16 IAS LAs in Chpt 2 and Chpt 3 Regional Assessment	**6 (16)**
Chpt 5 Institutional arrangements and management (Responses)	2 CLAs	4 LAs	7 IAS LAs in Chpt 6 Regional Assessment	**6 (7)**
Chpt 6 Awareness raising, early warning systems	2 CLAs	4 LAs	5 IAS LAs in Chpt 5 Regional Assessment	**6 (5)**
+ Liaison Experts (LEs) (2 from each region)		8 LEs		**8**
Total	**14 CLAs**	**32 LAs + 8 LEs**		**54 (37)**

NOTE: this does not include the 2 Review Editors per chapter.

Annex 3

Draft scoping report for a thematic assessment of sustainable use of biodiversity

Contents

Introduction

The Plenary of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services at its third session (decision IPBES-3/1, part IV) approved the initiation of scoping, primarily using virtual approaches, for a thematic assessment of sustainable use and conservation of biodiversity, for consideration by the Plenary at its fourth session. In addition, the same decision (part III) requested the MEP, in consultation with the Bureau, to develop a coordinated approach among the approved processes for the regional and subregional assessments, the thematic assessments and a global assessment, as resources permit, with a view to ensuring consistency while maintaining the quality of each of the assessments. Accordingly, a scoping document was developed through an open e-conference 7-25 September 2015, with the assistance of an expert group. The present note constitutes the scoping document developed.

Scope, rationale & utility

Scope

The objective of the proposed thematic assessment is to assess the sustainable use and conservation of biodiversity and strengthening capacities and tools, in line with the objectives of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Human use of biodiversity is a dominant driver of change for biodiversity, with implications for nature's benefits to people and quality of life. This assessment focuses on practices and measures that enhance sustainability in a broad sense, including conservation of biodiversity and ecosystem services. Hence, there is an integrative perspective on humans and their physical surroundings i.e. a system approach, recognizing the inseparable unity of nature and culture. It

refers to Strategic Goal B in the Aichi targets: Reduce the direct pressures on biodiversity and promote sustainable use, ***so as to maintain integrity, functioning and services of ecosystems***.

The assessment is solution oriented, recognizing sustainable use as a way to ensure that we meet the needs of both present and future generations. A particular issue to be considered is the appropriate scale for addressing sustainable use. In accordance with CBD, sustainable use of biodiversity is here defined as "use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations" (Article 2). Hence, sustainable use is also an effective tool for achieving the Sustainable Development Goals (SDG), eradicating extreme poverty and hunger and ensuring environmental sustainability.

This assessment will build on existing knowledge, taking into account good examples and best practices of general interest at regional and global levels. Given the fact that the theme of sustainable use and conservation of biodiversity is very wide, and considering the financial and temporal limitations of the IPBES work programme 2014-2018 as well as potential overlaps with other IPBES assessments, a limited number of categories of use that occur in all regions, and for which there is a great need of attention, are selected:

- Sustainable harvesting and trade of wild species. The issue includes both modern technologies and indigenous and local knowledge and methods, for sustainable management and harvesting and the effects on this from State decisions and policies.
- Sustainable tourism. Tourism is one of the world's fastest growing industries, causing severe land use changes, while also carrying potentials for positive drivers for biodiversity conservation and quality of life.
- Sustainable aquaculture

Aquaculture refers to the cultivation of fish, crustaceans, molluscs, and aquatic plants, including the production of biofuels from algae and. It is the fastest growing animal food-producing sector in the world, and it occurs in both inland water and marine environments.

These three topics relate to important biodiversity related issues and represent various dimensions: wild species, managed species, water environments, terrestrial environments, relevance for indigenous people and local communities, relevance for the world population at large. Moreover, they are also intended as pilot cases that will give lessons for further elaborations on sustainable use in future IPBES assessments.

Rationale

Sustainable use of biodiversity represents a way to promote the conservation of biodiversity, the maintenance of ecosystem services **while providing opportunities** for socioeconomic development. Moreover, it includes tackling threats such as overexploitation and habitat loss among other direct and indirect drivers of biodiversity and cultural loss worldwide. Its benefits apply at the local, national, regional and international levels.

In order to develop and establish sustainable use and conservation of biodiversity, information on the practices and assessments related to the benefits to the ecological, economic as well as social aspects of sustainability including the information on indigenous and local knowledge is considered vital.

Utility

The assessment will contribute to the development and establishment of sustainable use and conservation of biodiversity components, including identification of knowledge gaps and better technologies, ***processes and methodologies***, including that of indigenous and local knowledge. It will also contribute to the development of policy support tools, policy ***strategies*** and methodologies, to handling drivers of change and enhancing sustainable management schemes, to aiding compliance and enforcement measures, and to addressing capacity-building needs.

Assumptions

The work will be carried out by a multi-disciplinary group of experts, including experts with a range of backgrounds (ecology, systematics, geography, policy, environmental and ecological economics, ecosystem accounting, anthropology, sociology, philosophy, environmental and sustainability sciences), stakeholders and practitioners relevant to biodiversity and ecosystem services decisions (e.g., business, governments, NGOs), as well as traditional knowledge holders and a range of cultural traditions, nominated by governments and stakeholders and selected by the MEP in accordance with the procedures for the preparation of the Platform's deliverables.

The proposed assessment would be based on the current scientific literature on the SUB identified and, high quality grey literature, such as that contained in reports from institutions such as the Convention on Biological Diversity (CBD), the Convention on the International Trade in Wild Species of Flora and Fauna (CITES), the Convention on the Conservation of Migratory Species of Wild Animals, the Food and Agriculture Organization of the United Nations, the International Tropical Timber Organization, the United Nations Environment Programme World Conservation Monitoring Centre and the International Union for the Conservation of Nature, The United Nations Framework to Combat Climate Change (UNFCCC) in relation to the REDD+ and other relevant institutions.

Addressing ILK aspects:

Working with indigenous and local knowledge in the context of IPBES assessments requires recognition that effective and ethical practices in this domain support a dynamic interactive cycle. Projects and activities, including biodiversity assessments, should be seen as cycles of continuous and on-going communication and interaction. Because of the dynamic nature of ILK, IPBES processes should be open to ongoing and novel

submissions (e.g. the products of global and sub-regional dialogues) of relevant research and materials from different knowledge systems including gray literature and inputs from the ILK Task Forces, the Roster of ILK Experts and Networks, and develop means to address them in IPBES assessments and other deliverables. The Guide on production and integration of assessments from and across scales (IPBES/3/INF/4) offers a useful starting point for orienting discussion and a means of further focusing the scope of how ILK will be addressed in the context of SUB issues and this thematic assessment.

Chapter outline and chapter content

The thematic assessment will be presented in a six-chapter report, as set out below:

Chapter 1 will provide an overarching background on sustainable use principles, including recognized standards on sustainable use of biodiversity; the precautionary approach; maximum sustainable yield theory; the importance of sustainable use to local communities and livelihoods; the contribution of sustainable harvesting to habitat and biodiversity conservation; and synergy with biodiversity-related conventions, specialized agencies and other stakeholders. In order to implement the actions of sustainable use, it is necessary to understand the interactions and relationships between the historical process and the political and economic decisions. The chapter will address the two crucial aspects of biodiversity and sustainable use: the intragenerational equity and the intergenerational equity. The CBD Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity are recognized as a vital point of departure.

Chapter 2 will identify indicators to be used in the assessment, preferably related to practices that represent all regions, and will refer to all aspects of sustainability, ecological, economic, social and institutional and the relationships between them, to know if the use is sustainability or not considering status as well as trends, including direct and indirect drivers like changes in consumption patterns, cultural changes, demand for land, commodity prices, and political changes affecting the access to resources, and security issues. Indicators for the quality of current uses according to current preferences as well as indicators for the potential of future generations to use biodiversity and ecosystems according to their own preferences, should identified. For biodiversity conservation, genetic diversity, special taxon, groups of taxa, ecosystems as well ecosystem services will be considered. The indicators and metrices should largely correspond with the subregions and ecoregions in regional assessments in IPBES.

Chapter 3 will feature an assessment of sustainable practices and measures of sustainable harvesting and trade of wild species, taking into account the different levels of management to which wild species are subjected. Work under CITES and the Convention on Biological Diversity is of particular interest given that the aim of

CITES is to ensure trade in species covered by the Convention is legal, traceable and sustainable, and that sustainable use of biodiversity is the second objective of the Convention on Biological Diversity and is explicitly referred to in the Convention's Aichi Biodiversity Targets 3, 4, 6, 7 and 18. The assessment of thematic groups (such as precious wood species; non-timber plants, including medicinal plants, fungi (for food and medicine), commercially harvested marine species, including sharks; or terrestrial vertebrates, including reptile skins; from all United Nations regions) for which there are relatively good data that could provide an objective account of the ecological, commercial and social factors that affect whether harvest and trade have positive or negative impacts on wild populations and their habitats, ecosystem services and other socioeconomic and cultural assets.

Chapter 4 will feature an assessment of sustainable practices and measures of sustainable tourism. Tourism causes resource degradation, pollution, and loss of biodiversity all over the world, implying increased vulnerability, undermined health systems, and reduced resilience. Planning and management controls can reduce the impact of unsustainable tourism on environments and ensure that investment on tourism products by local communities support sustainable tourism, and holiday destinations put more effort into sustainable tourism.

CBD addresses tourism as an important issue, and has been active in processing ideas and guidelines concerning sustainable tourism, landscape diversity and biodiversity. The Global Sustainable Tourism Council (GSTC) serves as the international body for fostering increased knowledge and understanding of sustainable tourism practices, promoting the adoption of universal sustainable tourism. There is also a vast literature on sustainable tourism, involving researchers from various disciplines.

Chapter 5 will feature an assessment of sustainable aquaculture. FAO Committee **on Fisheries** (COFI) recognizes aquaculture as increasingly important in production for human nutrition and poverty alleviation. Aquaculture is a growing industry all over the world. In common with all other food production practices, aquaculture is facing challenges for sustainable development. In research, there is a growing amount of literature on sustainable aquaculture, and the concept is increasingly recognized to incorporate both spatial and temporal dimensions of environmental, economic, and social parameters. The World Bank supports initiatives for sustainable aquaculture in a number of countries. There is data available under the Aquaculture Stewardship Council (ASC) relevant to the marine environment.

Chapter 6 brings together conclusions and lessons from across the three substantive chapters. Based on that, it will present policy support tools at a general level, including a compilation of management guidelines and tools (including best practices, procedures, lessons learned and recommendations) on sustainable use. One important issue is stakeholder engagement, cooperation between them and implementation of projects in the field, to

reach capacity building and knowledge generation, taking in account existent indigenous knowledge about the ecology and behavior of the species used and natural resources management.

Indicators, metrics and data sets

In the selection of indicators, it should be considered that the categories selected for the assessment (harvest and trade of wild species, tourism, and aquaculture) will function as pilots, by which general knowledge on how to approach the issue of sustainable use can be developed and refined, while the themes, are quite different and the indicators may probably need to be chosen separately for each chapter. More general indicators and metrics for assessing SUB are needed for global assessments. Recent examples for planetary boundary for biophysical processes and use of indicators related to Aichi-targets provide inspiring approaches. For important land and water use there are also global multi membership organizations that address indicators and metrics and suggest different standards for sustainability that provide relevant suggestions to build on. Many indicators that are presently used may use the same name "title" but are calculated differently. Hence, it is important that indicators use a specific "equation" to make them comparable, and so different calculation formulas can be understood for future comparisons. At the same time, there may be appropriate to use different sets of indicators for different regions, depending on physiographic location, socio-economic status, topography, political system and other site-specific indicators.

Both formal scientific methods and traditional or local knowledge systems should be considered, including the extensive body of research that has documented in all regions of the world, where the wealth and diversity of sustainable use practices and community-based management systems elaborated by indigenous people and local communities to conserve biodiversity exist. Participatory monitoring efforts by local people have increased the information available to assessments, especially those documenting resource consumption.
It is important to indicate what the gaps are and where efforts have to be invested regarding data sets that are currently unavailable.

Relevant stakeholders and initiatives

Stakeholder involvement is central to creating the appropriate enabling environment to undertake an assessment. The core principles of successful assessments (relevance, credibility and legitimacy) are best achieved through strategic and effective participation of all relevant stakeholders in the assessment process. Having a diverse range of stakeholders involved in an interactive process can promote knowledge and

information exchange and allows different groups to express their positions and interests on issues. Furthermore the involvement of multiple stakeholders can enrich the process, with individuals and organizations working to a common goal, and ownership of the assessment contributing to the authorization environment.

Relevant stakeholders and initiatives include Multilateral Environmental Agreements, UN programmes, international commissions, national governments, scientific advisory groups, scientific organizations, networks, programmes, research centers and specialist "boundary" organizations working in support of governance processes.

An increasing number of intergovernmental arrangements at the regional level play important roles in interfacing science and policy in biodiversity and ecosystem governance.
Relevant stakeholders are also to be found among civil society organizations, in the business sector and among internationally recognized and active non-government organizations and indigenous and local communities, including traditional knowledge holders

In addition, indigenous people have set up their own forums and platforms, and there are networks interested in supporting the work of the IPBES task forces on indigenous and local knowledge, capacity building and knowledge and data management.

Capacity Building

Capacity building is to create the conditions driving to real implementation of SUB. The thematic assessment on the sustainable use of biodiversity (SUB) should address what capacities would need to be built to more effectively strengthen the interface between science, other knowledge systems and policy on SUB. It should address sustainable development broadly, e.g. wildlife population and habitat management, environment policies, economic aspects and social and cultural issues. The tools, metrics, methods and means that governments and other actors have at their disposal should be considered. Clear indications in the assessment on the current availability of those tools, examples of their utilization, and application in a diversity of contexts with measurable biodiversity, ecosystem services and well-being outcomes (benefits) will help to make the case for appropriate applications

The capacity development needs to be multidirectoral and cover not only the policy and legal level, but also organizations/institutions and individual/technical aspects. Capacity building is a necessary part of building just and sustainable societies, including entrepreneurial sustainability management, corporate

social responsibility (CSR) and social entrepreneurship. Community identity and collective action are essential to support in respect to capacity building. The role of indigenous and local knowledge (ILK) in solving current biodiversity conservation problems should also be investigated. The Guide on production and integration of assessments from and across scales (IPBES/3/INF/4) offers a useful starting point for orienting how capacity building can be addressed in the context of SUB issues and this thematic assessment.

Aiming at strengthening the science-policy interface, IPBES seeks to address current asymmetries in capacity across the world by identifying and prioritizing developing countries' needs for capacity development. The thematic assessment of sustainable use and conservation of biodiversity and strengthening can contribute to identifying such needs, and to evaluate the effectiveness of existing capacity building activities at global level.

Process and timetable

1. The proposed process and timetable for preparing the assessment report, including actions, milestones and institutional arrangements, is set out below.

Date	***Actions and institutional arrangements***
2016	
First quarter	Plenary at its fourth session approves the conduct of the thematic assessment of sustainable use and conservation of biodiversity coupled with the regional assessments of biodiversity and ecosystem services, asks for offers of in-kind technical support for the assessment and requests the Bureau and the secretariat to establish the necessary institutional arrangements to put in place technical support
	The Chair, through the secretariat, requests nominations from Governments and other stakeholders of experts to prepare the assessment report
Second quarter	Secretariat compiles lists of nominations
	The Panel selects the assessment co-chairs, coordinating lead authors, lead authors and review editors, using the approved selection criteria set out in decision IPBES-2/3 (IPBES/2/17, annex)
	Meeting of the Management Committee (co-chairs, head of the technical support unit, and MEP/Bureau members) to select remaining expert team and respective roles (i.e., coordinating lead authors, lead authors and review editors)
	Selected nominees contacted, gaps filled and list of co-chairs, authors and review editors finalized

Second/Early third quarter	First author meeting with 55 participants: co-chairs, coordinating lead authors and lead authors, 8 liaison experts involved in regional assessments (two experts for each of the four regional assessments), MEP/Bureau members.
Fourth quarter	Zero order drafts of chapters prepared and sent to secretariat (technical support unit)
2017	
First quarter	First order drafts of chapters prepared and sent to secretariat (technical support unit)
	Compilation of chapters into first order draft (6 weeks)
Second quarter	First order draft of collated regional and subregional sustainable use and conservation of biodiversity assessments sent for expert review (6 weeks, June/July)
	Collation of review comments by secretariat technical support unit for first order draft sent to authors (2 weeks)
Early Third quarter	Second author meeting (39 participants, including: 8 liaison experts involved in the regional assessments, MEP/Bureau, co-chairs, coordinating lead authors and review editors)
Third quarter	Second order drafts of chapters and first order draft of summary for policymakers prepared (5–6 months)
2018	
First quarter	Second order draft of the assessment and first order draft of the summary for policymakers sent for government and expert review (2 months)
First quarter	Collation of review comments for second order draft of the assessment and first order draft of the summary for policymakers sent to authors (2 weeks)
Second/Early Third quarter	Third author meeting 67 participants: co-chairs, coordinating lead authors, lead authors, review editors and MEP/Bureau members)
Third/Fourth quarter	Final text changes to the assessment and the summary for policymakers (6 months)
2019	
First quarter	Translation of the summary for policymakers into the six official languages of the United Nations (1 month)
First quarter	Submission of the assessment, including the translated summary for policymakers, to Governments for final review prior to Plenary session (6 weeks)
First quarter	Final government comments on the summary for policymakers for consideration by authors prior to next Plenary session
May (To be confirmed)	Plenary to approve/accept the thematic assessment of sustainable use and conservation of biodiversity, including the summaries for policymakers

Cost estimate

2. The table below shows the estimated cost of conducting and preparing the assessment report.

Year	*Cost item*	*Assumptions*	*Estimated costs (United States dollars)*
2016	Meeting of co-chairs and secretariat/technical support unit	Meeting costs (1/2 week, 5 participants, in Bonn)	0
		Travel and DSA (3 x $3,750)	11 250
	First author meeting (participants: co-chairs, coordinating lead authors, lead authors, liaison experts and MEP/Bureau)	Meeting costs (1 week, 55 participants) (25 per cent in kind)	18 750
		Travel and DSA (42 x $3,750)	157 500
	Technical support	1 full-time equivalent professional position (50 per cent in kind)	75 000
2017	Second author meeting (participants: co-chairs, coordinating lead authors, review editors, liaison experts and MEP/Bureau)	Meeting costs (1 week, 39 participants) (25 per cent in kind)	7 500
		Travel and DSA (30 x $3,750)	112 500
	Technical support	1 full-time equivalent professional position (50 per cent in kind)	75 000
2018	Third author meeting (participants: co-chairs, coordinating lead authors, liaison experts, review editors and MEP/Bureau)	Meeting costs (1 week, 67 participants)	18 750
		Travel and DSA (51 x $3,750)	191 250
	Technical support	1 full-time equivalent professional position (50 per cent in kind)	75 000
	Participation by the two co-chairs and two coordinating lead authors in fifth session of Plenary	Travel and DSA (3 x $3,750)	11 250
2019	Dissemination and outreach	Translation of summary for policymakers into the six official languages of the United Nations, publication and outreach	117 000
Total			**870 750**

Appendix 1

Numbers and distribution of authors across the thematic and regional assessments

Table1: Coupling from the perspective of the SUB Assessment

Chapter of SUB Assessment	**SUB CLAs**	**SUB LAs**	**SUB LAs embedded in Regional Assessments**	**Total**
Intro/Summary	2 Co-Chairs		-	**2**
Chpt 1 Background on SUB principles and standards	2 CLAs	8 LAs	-	**10**
Chpt 2 Indicators all regions and all aspects of SUB	2 CLAs	4 LAs	? SUB LAs in Chpt ? Regional Assessment	**10 (?)**
Chpt 3 Harvesting and trade of wild species	2 CLAs	4 LAs	? SUB LAs in Chpt ? Regional Assessment	**6 (?)**
Chpt 4 Sustainable tourism	2 CLAs	4 LAs	? SUB LAs in Chpt ? Regional Assessment	**6 (?)**
Chpt 5 Sustainable aquaculture	2 CLAs	4 LAs	? SUB LAs in Chpt ? Regional Assessment	**6 (?)**
Chpt 6 Policy support tools and management guidelines	2 CLAs	4 LAs	10 SUB LAs in Chpt 6 Regional Assessment	**6 (10)**
+ Liaison Experts (LEs) (2 from each region)		8 LEs		**8**
Total	**14 CLAs**	**28 LAs + 8 LEs**		**50 (40)**

NOTE: this does not include the 2 Review Editors per chapter.